

AQUACULTURE DEVELOPMENT PROGRAM

Aquaculture in Hawai'i is at once very old and very modern. The ancestral traditions defining the Hawaiian culture are based on a relationship between man, sea and the land. To Polynesians, the ocean is an extension of the land, a marine garden to be cared for and harvested. Ancient Hawaiians developed a sophisticated system of loko i'a (fishponds) unique among Polynesian cultures. Nowhere else in the Pacific were such extensive efforts made to construct and cultivate ponds to provide convenient sources of fish to eat. As the population of the Hawaiian Islands increased,



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fishpond technology became increasingly important in supplying the growing food needs.

While Hawai'i has a long tradition of sustained aquaculture in coastal Hawaiian fishponds, commercial aquaculture is a modern business.

Beginning in the 1960s with the growth of the freshwater prawn farms, the Department of Land and Natural Resources has provided leadership and support to this vital industry through the Aquaculture Development Program.

The Aquaculture Development Program (ADP) was established in 1979 with the delivery of the first State Aquaculture Plan to the Hawai'i Legislature. Hawai'i was the first state to do a comprehensive statewide aquaculture plan, and is recognized as a leader in sustainable aquaculture planning and development. More importantly, historically strong and consistent state support of industry has fostered an international reputation for innovative research, leading-edge technology and high-quality commercial products that attract investor interest from Mainland and foreign sources.

The mission of the Aquaculture Development Program (ADP) is to prepare and implement state aquaculture action plans and policies for

the expansion of production and service industries, coordinate statewide activities, and directly assist both public and private sector interests in achieving their aquaculture-related goals, so as to create jobs and diversify the economies of all islands.

The Aquaculture Development Program provides a wide range of essential support services to encourage growth and diversification of the state's aquaculture industry. ADP is a planning, development and problem-solving organization whose goals are to get production and service businesses started and ensure their success. Specific functions include information dissemination, business counseling, locating a suitable aquaculture site, permit assistance, marketing, animal health management and extension services funding.

Hawai'i's industry is very diverse and includes a commercial production sector producing both food and other products, such as specialty chemicals, aquarium species and disease-free seed stock. There is also a services sector which fosters economic benefits from basic and applied research, consulting, training and professional conferences, as well as degree education revenues by the University of Hawai'i. There are now

over 170 businesses around the islands, and in 1997, they were expected to generate around \$37 million in annual sales of products and services. The "bottom line" is, with strong state investment in the future through ADP, together the public and private sectors have "grown" a sustainable aquaculture industry that is expanding, environmentally-sound and supported by a broad cross-section of the community.

HIGHLIGHTS

During these fiscal years, the Hawai'i industry was characterized by rapid expansion and increased diversification of products. The number of farms increased to 157 with the ADP effort to identify and include in the farms list, everyone growing tropical fish for sale.

Expanding the culture of freshwater and saltwater aquarium species was a major program focus during this biennium — with emphasis on the recommendations in the 1996 Report to the Legislature on the potential of this industry segment. A directory of Hawai'i Aquarium Products was published in 1997, followed by an updated version in 1998. A summit of the leaders of all the organizations involved in the

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collection and culture of aquarium species was held to discuss areas of possible cooperation. A series of workshops were also run for growers, wholesalers and retailers to cooperatively work with the Department of Agriculture (DOA) on updating the species importation list. Finally, a major international conference is being planned for November 1999, titled "Marine Ornamentals '99: Collection, Culture and Conservation," that will be the first of its kind and feature Hawai'i's research and development efforts.

"Big aquaculture" took a giant leap with the start-up of potentially multi-million dollar companies on several islands. Capital intensive, high-tech farms have begun on Kaua'i (CEATECH) growing shrimp, O'ahu (Mangrove Tropicals) growing marine ornamentals, and Hawai'i (Big Island Abalone, Aquasearch, Coast Seafoods and Taylor Resources and Micro Bio-products) growing abalone, microalgae, oyster seed and high value seaweed. ADP provided a variety of information and assistance to all of these companies.

Hawaiian fishpond restoration on Moloka'i continued to be a priority for the program. ADP, after securing the leases for two state-owned

Hawaiian fishponds on Moloka'i to demonstrate community-based restoration, established a partnership with the Department of Land and Industrial Relations, Office of Community Services, to hire an on-site coordinator and work with the community on restoration efforts. Work began on Honouliwai Fishpond in June 1997 and was completed in May 1998. Work on the second pond, Kahinapōhaku, is underway.

Opportunities for development of open-ocean aquaculture for Hawai'i were also the focus of considerable attention. ADP is part of a group, which includes the University of Hawai'i Sea Grant College Program and the Oceanic Institute, that is planning a demonstration project for open-ocean, cage culture of moi in Hawaiian waters. Staff drafted amendments to Chapter 190D, the Ocean and Submerged Lands Leasing law for submission to the Legislature to make the law more user-friendly for mariculture projects. An international conference was co-sponsored on open-ocean aquaculture in May 1997 on Maui, which brought experts from all over the world to address this subject. At the conference a new national program to designate six national centers for open-ocean mariculture was

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announced by the U.S. Department of Commerce, with Hawai'i to be designated the first such center. ADP was a participant in the planning for this new center, which should be followed by significant federal research dollars in the coming years.

The following are accomplishments for FYs 1996-1997 and 1997-1998:

PLANNING AND COORDINATION

PROGRAM ACCOMPLISHMENTS, FY 1996-97.

- Organized and staffed two meetings and one subcommittee meeting for the Hawai'i Aquaculture Advisory Council.
- Participated in meetings of 15 boards and committees (e.g., the Center for Tropical and Subtropical Aquaculture; the Natural Energy Laboratory of Hawai'i Authority; University of Hawai'i Sea Grant Advisory Council; Hawai'i Aquaculture Association; Open Ocean Aquaculture II Planning Committee).
- Organized Hot Spot Team and developed plan for Moloka'i fishpond restoration.
- Staffed the Hawai'i Aquaculture Association.

PROGRAM ACCOMPLISHMENTS, FY 1997-98.

- Organized and staffed one meeting of the Hawai'i Aquaculture Advisory Council.
- Continued departmental efforts to work with the Moloka'i community to restore ancient Hawaiian fishponds through preparation and implementation of a Hot Spot plan and organization of a Hot Spot Team, led by ADP. Efforts were recognized by the Hawai'i Chapter of the American Planning Society with an award for best project in environmental preservation.
- Participated in meetings of 12 boards and committees (e.g., Hawai'i Aquaculture Association; Natural Energy Laboratory of Hawai'i Authority; Pacific Regional Aquaculture Center; the Sea Grant Advisory Council; Organizing Committee Marine Ornamental '99).
- Staffed the Hawai'i Aquaculture Association and produced the association newsletter.
- Hosted visits and tours for officials from Thailand, People's Republic of China, Israel, New Zealand, and the Marshall Islands.

SUPPORT SERVICES AND RESEARCH

PROGRAM ACCOMPLISHMENTS, FY 1996-97.

- On 79 occasions, provided reviews and assistance to various government and non-profit agencies. These activities included responding to requests for information from the congressional delegation and state legislators; reviewing research proposals; reviewing loan proposals; advising on permit problems; and speaking at workshops.
- Participated in 17 events to promote aquaculture products and enhance aquaculture development. These included both the State Farm Fair and the Hawai'i County Fair, the Hotel and Restaurant Expo, Hawai'i Agriculture Day, Sam Choy Poke contest, and the Bishop Museum "Ocean Planet" exhibit.
- Carried out 158 field trips and 360 case submissions, and provided animal health consultation services to producers and research organizations.
- Business development assistance was extended to prospective farmers wishing to raise such species as: marine aquarium ani-

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mals, Chinese catfish and carp, oysters, live rock, tilapia, marine shrimp, abalone and corals; as well as persons interested in restoring Hawaiian fishponds. More than 53 individuals and groups were counseled, representing a wide range of ventures — from “backyard” projects to multi-million dollar enterprises.

- Provided assistance and/or materials for nine requests from the print, radio, and television media. Stories describing Hawai‘i’s aquaculture industry appeared on KHVH and KHPR radio, television news, and in Pacific Business News, the Honolulu Advertiser, Pearl World and Readers Digest. In addition, staff developed web pages for two farms selling disease-free shrimp, maintained ADP’s own web page, and published 39 technical and popular articles.
- Assisted Hawai‘i’s aquaculture consultants on ten occasions on topics such as pearls, grant development, siting, and Hawaiian fishponds.
- Managed contracts totaling \$145,228 on disease research and management.

PROGRAM ACCOMPLISHMENTS, FY 1997-98.

- Continued high-profile marketing campaign for Hawai‘i’s aquaculture products, services and investment opportunities through direct media assistance; publication of 30 articles, newsletters, and promotional pieces; 22 presentations and speeches; and various clearing-house and referral activities.
- Participated in 13 events to promote aquaculture and aquaculture products, including Hawai‘i State Farm Fair, Hotel and Restaurant Expo, Bishop Museum Ocean Day, Made in Hawai‘i Expo, Big Island County Fair, Agriculture Awareness Day, ‘Ewa Limu Festival.
- Carried out 150 field trips, and analyzed 326 case submissions, and provided statewide animal health consultation services to producers and research organizations.
- Provided major expertise and problem-solving assistance to 45 government and non-profit agency requests, and addressed 59 private sector requests for assistance.

- Provided initial and/or follow-up assistance to more than 51 new business development opportunities.
- Provided assistance and/or materials for 12 requests from the print, radio, and television media, including preparation of two press releases.
- Continued, with the University of Hawai‘i’s Sea Grant Program, statewide extension specialist assistance in production management.

